

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 6668/WO	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 00/ 09444	International filing date (day/month/year) 21/09/2000	(Earliest) Priority Date (day/month/year) 22/09/1999
Applicant SOCIETE DES PRODUITS NESTLE S.A.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :
- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the title,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

- ☐ as suggested by the applicant.
- ☐ because the applicant failed to suggest a figure.
- ☐ because this figure better characterizes the invention.
- ☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

/EP 00/09444

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A23K1/16 A23K1/18

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A23K A61K A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data, CAB Data, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	US 6 156 355 A (BENNETT JEFFREY P ET AL) 5 December 2000 (2000-12-05) column 6, line 41 - line 61 column 11, line 25 - column 12, line 7 column 14, line 38 - line 52 claims 4-7 claims 4-7	1-6, 16
P, X	<p>-----</p> <p>PATENT ABSTRACTS OF JAPAN vol. 2000, no. 08, 6 October 2000 (2000-10-06) & JP 2000 125778 A (BIO TEC JAPAN:KK;YUKIGUNI MAITAKE CO LTD; KOUKIN TECHNO:KK), 9 May 2000 (2000-05-09) abstract</p> <p>-----</p> <p style="text-align: center;">-/--</p>	1, 3

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * & * document member of the same patent family

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INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 594 644 A (GIRAUD CHRISTIAN) 28 August 1987 (1987-08-28) page 1, line 1 - line 9 page 1, line 30 - page 2, line 4 claims 1,3,6	1,3,7,8, 14-16, 19-21
Y	---	2,4,6, 9-11,13
Y	EP 0 850 569 A (NESTLE SA) 1 July 1998 (1998-07-01) cited in the application page 2, line 3 - line 7 page 7, line 31 - line 33 claims 1,3,5	2,4,6,9, 10,13
Y	---	
Y	EP 0 862 863 A (NESTLE SA) 9 September 1998 (1998-09-09) cited in the application page 2, line 5 - line 19 example 5 claims 1,4	11
X	---	
X	LOWE J A: "CANINE NUTRITION - RECENT ADVANCES" 1988 , CONFERENCE ON BIOTECHNOLOGY IN THE FEED INDUSTRY. PROCEEDINGS OF ALLTECH XP000670866 page 285, paragraph 3	1,3,7,8, 14-16, 19,20
X	---	
X	EP 0 630 576 A (SARIC KRUNOSLAV) 28 December 1994 (1994-12-28) page 2, line 7 - line 8 page 2, line 38 - line 53 page 3, line 7 - line 8 examples 1-3	1,3-5
X	---	
X	EP 0 042 303 A (EISAI CO LTD) 23 December 1981 (1981-12-23) page 3, line 23 - page 4, line 5 page 5, line 23 - line 27 claim 3	1,3
A	---	
A	US 5 776 524 A (REINHART GREGORY A) 7 July 1998 (1998-07-07) the whole document	1-4,6
A	---	
A	WO 99 22604 A (MARS UK LTD ; FONE JANEL (GB)) 14 May 1999 (1999-05-14) examples 1-3 claims 1-22	1-4,6

INTERNATIONAL SEARCH REPORT

Ir on on patent family members

International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6156355	A	05-12-2000	NONE	
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FR 2594644	A	28-08-1987	NONE	
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US 5776524	A	07-07-1998	NONE	
WO 9922604	A	14-05-1999	AU 9753298 A EP 1026958 A	24-05-1999 16-08-2000

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60/155,451 22 September 1999 (22.09.1999) US

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(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ,
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HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,
NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,
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ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: **METHOD FOR INCREASING PET ACTIVITY**

(57) Abstract: A method for improving activity in a pet; especially elderly cats and dogs. The pets are administered to a nutritional agent which promotes the growth of bifido- and lactic-bacteria in the gastro-intestinal tract of the pet. The nutritional agent may be a prebiotic or a probiotic micro-organism, or both.

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INTERNATIONAL SEARCH REPORT

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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- (25) Filing Language: **English**
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- (30) Priority Data:
60/155,451 22 September 1999 (22.09.1999) **US**
- (71) Applicant (for all designated States except US): **SOCIETE DES PRODUITS NESTLE S.A. [CH/CH]; P.O. Box 353, CH-1800 Vevey (CH).**
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **SCHIFFRIN, Eduardo [AR/CH]; Chemin de Riant-Mont 17, CH-1023 Crissier (CH). CZARNECKI, Gail [US/US]; 3550 SE 95th Street, Easton, MO 64443 (US).**
- (74) Common Representative: **SOCIETE DES PRODUITS NESTLE S.A.; Asby, Kevin, CH-1800 Vevey, P.O. Box 353 (CH).**
- (81) Designated States (national): **AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.**
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- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*



WO 01/21008 A2

(54) Title: **METHOD FOR INCREASING PET ACTIVITY**

(57) Abstract: **A method for improving activity in a pet; especially elderly cats and dogs. The pets are administered to a nutritional agent which promotes the growth of bifido- and lactic-bacteria in the gastro-intestinal tract of the pet. The nutritional agent may be a prebiotic or a probiotic micro-organism, or both.**

Method for increasing pet activityField of the invention

This invention relates to a method of increasing the activity of pets; especially elderly cats and dogs.

Background of the invention

Once reach an age where their systems start to slow down, certain symptoms of aging begin to manifest themselves; joint stiffness, energy loss, weight gain, increased water intake, digestive system problems, a dull, dry coat and flaky skin. For dogs, this usually starts becoming noticeable at about 5 years for larger breeds and about 7 years for smaller breeds. For cats, this usually starts becoming noticeable at about 7 years. However, the process is different for every animal and there is no standard age at which the symptoms become manifest.

The onset of many of these symptoms may be delayed by feeding the animal a complete, well-balanced diet over its life. Further, the condition of the elderly animal can be improved through nutrition. In particular, healthy animals should be fed a balanced, maintenance food that contains high quality protein, lower amounts of fat to reduce energy intake, dietary fiber, and antioxidants. Also, regular exercise is important to maintain muscle tone, enhance circulation, promote digestion and prevent weight gain.

However, despite good nutrition and regular exercise, many older animals are lethargic and appear to lack energy. Similar problems may also occur in younger animals.

Therefore there remains a need for ways of improving the activity of pets; especially older pets.

Summary of the invention

Accordingly, in one aspect, this invention provides a method for improving activity in a pet, the method comprising administering to the pet a nutritional agent which promotes the growth of bifido- and lactic-bacteria in the gastrointestinal tract of the pet.

It has been surprisingly discovered that administering to a pet a nutritional agent which promotes the growth of bifido- and lactic-bacteria in the gastro-

intestinal tract of the pet results in improved activity levels in the pet. This is particularly noticeable in elderly pets. Without wishing to be bound by theory, it is believed that, amongst other mechanisms, increasing the concentrations of bifido- and lactic-bacteria in the gastro-intestinal tract of the pet produces nutrients and/or increases the absorption of nutrients which provides the pet with better nutrition and more energy. Further, increasing the concentrations of bifido- and lactic-bacteria in the gastro-intestinal tract of the pet reduces the concentrations of pathogenic bacteria in the gastro-intestinal tract and this may improve systemic inflammatory status; leading to less joint stiffness.

In another aspect, this invention provides a method for ameliorating joint stiffness in a pet, the method comprising administering to the pet a nutritional agent which promotes the growth of bifido- and lactic-bacteria in the gastro-intestinal tract of the pet. The nutritional agent preferably assists in improving – by reducing – the systemic inflammatory status in the pet. This may be achieved by reducing concentrations of pathogenic bacteria known to contribute to an increased inflammatory status.

The pet is preferably an elderly pet; especially an elderly dog. The dog may be older than 5 years of age; for example older than 7 years of age. The cat may be older than 7 years of age.

Preferably the nutritional agent is administered to the pet in the form of a complete and nutritionally balanced pet food.

The nutritional agent may be a prebiotic, a probiotic micro-organism, or a fermentation product obtained from the fermentation of probiotic micro-organisms.

In this specification:-

"Prebiotic" means a substance or compound which is fermented by the intestinal flora of the pet and hence promotes the growth or development of bifido- and lactic-bacteria in the gastro-intestinal tract of the pet at the expense of pathogenic bacteria. The result of this fermentation is a release of fatty acids, in particular short-chain fatty acids in the colon. This has the effect of reducing the pH value in the colon.

"Probiotic micro-organism" means a micro-organism which beneficially affects a host by improving its intestinal microbial balance (Fuller, R; 1989; J. Applied Bacteriology, 66: 365-378). In general, probiotic micro-organisms produce organic acids such as lactic acid and acetic acid which inhibit the growth of pathogenic bacteria such as *Clostridium perfringens* and *Helicobacter pylori*.

Detailed description of preferred embodiments of the invention.

5 This invention is based upon the discovery that the activity levels in a pet may be improved by administering to the pet a nutritional agent which promotes the growth of bifido- and lactic-bacteria in the gastro-intestinal tract of the pet. The activity levels of elderly pets, such as elderly dogs, is particularly improved.

10 The nutritional agent may be a prebiotic, a probiotic micro-organism, or a fermentation product obtained from fermentation of a probiotic micro-organism. Further, combinations of the prebiotics, probiotic micro-organisms and fermentation products may be administered to the pet.

Suitable prebiotics include oligosaccharides, such as inulin and its hydrolysis products commonly known as fructooligosaccharides, galacto-oligosaccharides, xylo-oligosaccharides or oligo derivatives of starch. Combinations of starches and gums may also be used.

15 The prebiotics may be provided in any suitable form. For example, the prebiotic may be provided in the form of plant material which contains the prebiotic. Suitable plant materials includes asparagus, artichokes, onions, wheat, yacon or chicory, or residues of these plant materials. Alternatively, the prebiotic may be provided as an inulin extract. Extracts from chicory are particularly suitable. Suitable inulin extracts may be obtained from Orafit SA of Tirlemont 3300, Belgium under the trade mark "Raftiline". For example, the inulin may be provided in the form of Raftiline®ST which is a fine white powder which contains about 90 to about 94% by weight of inulin, up to about 4% by weight of glucose and fructose, and about 4 to 9% by weight of sucrose. Alternatively, the prebiotic may be in the form of a fructooligosaccharide such as obtained from Orafit SA of Tirlemont 3300, Belgium under the trade mark "Raftilose". For example, the inulin may be provided in the form of Raftilose®P95. Otherwise, the fructooligosaccharides may be obtained by hydrolyzing inulin, by enzymatic methods, or by using micro-organisms.

30 The probiotic micro-organism may be selected from one or more micro-organisms suitable for animal consumption and which is able to improve the microbial balance in the intestine.

35 Examples of suitable probiotic micro-organisms include yeasts such as *Saccharomyces*, *Debaromyces*, *Candida*, *Pichia* and *Torulopsis*, moulds such as *Aspergillus*, *Rhizopus*, *Mucor*, and *Penicillium* and *Torulopsis* and bacteria such as the genera *Bifidobacterium*, *Bacteroides*, *Fusobacterium*, *Melissococcus*,

Propionibacterium, Streptococcus, Enterococcus, Lactococcus, Staphylococcus, Peptostreptococcus, Bacillus, Pediococcus, Micrococcus, Leuconostoc, Weissella, Aerococcus, Oenococcus and *Lactobacillus*. Specific examples of suitable probiotic micro-organisms are: *Saccharomyces cerevisiae, Bacillus coagulans, Bacillus licheniformis, Bacillus subtilis, Bifidobacterium bifidum, Bifidobacterium infantis, Bifidobacterium longum, Enterococcus faecium, Enterococcus faecalis, Lactobacillus acidophilus, Lactobacillus alimentarius, Lactobacillus casei* subsp. *casei, Lactobacillus casei Shirota, Lactobacillus curvatus, Lactobacillus delbruckii* subsp. *lactis, Lactobacillus farciminus, Lactobacillus gasseri, Lactobacillus helveticus, Lactobacillus johnsonii, Lactobacillus reuteri, Lactobacillus rhamnosus (Lactobacillus GG), Lactobacillus sake, Lactococcus lactis, Micrococcus varians, Pediococcus acidilactici, Pediococcus pentosaceus, Pediococcus acidilactici, Pediococcus halophilus, Streptococcus faecalis, Streptococcus thermophilus, Staphylococcus carnosus, and Staphylococcus xylosus*. The probiotic micro-organisms may be in powdered, dried form; especially in spore form for micro-organisms which form spores. Further, if desired, the probiotic micro-organism may be encapsulated to further increase the probability of survival; for example in a sugar matrix, fat matrix or polysaccharide matrix.

The nutritional agent may be administered to the pet as a supplement to the pet's normal diet or as a component of a nutritionally complete pet food. It is preferred to include the nutritional agent in a nutritionally complete pet food.

The nutritionally complete pet food may be in any suitable form; for example in dried form, semi-moist form and wet form. These pet foods may be produced as is conventional. Apart from the nutritional agent, these pet foods may include any one or more of a starch source, a protein source and lipid source. Suitable starch sources are, for example, grains and legumes such as corn, rice, wheat, barley, oats, soy, and mixtures of these. Suitable protein sources may be selected from any suitable animal or vegetable protein source; for example meat and meal, poultry meal, fish meal, soy protein concentrates, milk proteins, gluten, and the like. For elderly animals, it is preferred for the protein source to contain a high quality protein. Suitable lipid sources include meats, animal fats and vegetable fats. The choice of the starch, protein and lipid sources will be largely determined by the nutritional needs of the animal, palatability considerations, and the type of product produced. Further, various other ingredients, for example, sugar, salt, spices, seasonings, vitamins, minerals,

flavoring agents, fats and the like may also be incorporated into the pet food as desired.

For elderly pets, the pet food preferably contains proportionally less fat than pet foods for younger pets. Further, the starch sources may include one or more of rice, barley, wheat and corn.

For dried pet foods a suitable process is extrusion cooking, although baking and other suitable processes may be used. When extrusion cooked, the dried pet food is usually provided in the form of a kibble. If a prebiotic is used, the prebiotic may be admixed with the other ingredients of the dried pet food prior to processing. A suitable process is described in European patent application No 0850569; the disclosure of which is incorporated by reference. If a probiotic micro-organism is used, the organism is best coated onto or filled into the dried pet food. A suitable process is described in European patent application No 0862863; the disclosure of which is incorporated by reference.

For wet foods, the processes described in US patents 4,781,939 and 5,132,137 may be used to produce simulated meat products. The disclosures of these patents are incorporated by reference. Other procedures for producing chunk type products may also be used; for example cooking in a steam oven. Alternatively, loaf type products may be produced by emulsifying a suitable meat material to produce a meat emulsion, adding a suitable gelling agent, and heating the meat emulsion prior to filling into cans or other containers.

The maximum level of prebiotic in the pet food is preferably about 20% by weight; especially about 10% by weight. However, considerably lower levels are found to be effective in increasing activity levels. For example, the prebiotic may comprise about 0.1% to about 5% by weight of the pet food. For pet foods which use chicory as the prebiotic, the chicory may be included to comprise about 0.5% to about 10% by weight of the feed mixture; more preferably about 1% to about 5% by weight.

If a probiotic micro-organism is used, the pet food preferably contains about 10^4 to about 10^{10} cells of the probiotic micro-organism per gram of the pet food; more preferably about 10^6 to about 10^8 cells of the probiotic micro-organism per gram. The pet food may contain about 0.25% to about 20% by weight of the mixture of the probiotic micro-organism; preferably about 0.5% to about 6% by weight; for example about 3% to about 6% by weight.

The pet foods may contain other active agents such as long chain fatty acids. Suitable long chain fatty acids include alpha-linoleic acid, gamma

linolenic acid, linoleic acid, eicosapentanoic acid, and docosahexanoic acid. Fish oils are a suitable source of eicosapentanoic acids and docosahexanoic acid.

Borage oil, blackcurrent seed oil and evening primrose oil are suitable sources of gamma linolenic acid. Safflower oils, sunflower oils, corn oils and soy bean oils are suitable sources of linoleic acid.

If necessary, the pet foods are supplemented with minerals and vitamins so that they are nutritionally complete.

The amount of the pet food to be consumed by the pet to obtain a beneficial effect will depend upon the size or the pet, the type of pet, and age of the pet.

However an amount of the pet food to provide a daily amount of about 1g to about 100g of prebiotic, or about 10^6 to about 10^{12} cells of the probiotic micro-organism, would usually be adequate.

Numerous modifications may be made to the embodiments described above without departing from the scope of the invention. Specific examples recording the remarkable effects of feeding an embodiment of the inventive diet according to the invention to elderly pets are now described for further illustration.

Example 1

A first pet owner in Pretoria, South Africa has two golden retrievers, ages 8 and 9 years. She regarded them as forming an integral part of her family unit and consequently used to provide what she considered the best nutrition available - a conventional senior food from a veterinary brand. Nevertheless she observed that her dogs had poor coat quality and had the decreased activity typical of senior dogs. The owner states that she started feeding her dogs the petfood sold under the brand name Olympic Senior (this is a dry dog food containing an effective amount of inulin prebiotic). She reports having since seen the following changes in her dogs:

- shinier coats,
- a healthy look and,
- a return to being as lively as they had been a few years previously.

"Olympic" is a trade mark belonging to Epol (Proprietary) Limited.

Example 2

A second pet owner in South Africa reports having an elderly Staffordshire Terrier which was arthritic, moved slowly and was much less active than when

younger. In particular, it would not run around. The owner started feeding it a diet of Olympic Senior dry dog food, the same as in Example 1. Within a few months, the dog's activity levels increased, it began again to run around and is reportedly now willing and able to jump over a three foot fence.

Example 3

A pet owner in Great Britain reported having an elderly Labrador Retriever which was "very arthritic" and had trouble walking up stairs. She began feeding her dog Winalot Complete Digestion+, a dry dog food containing about 1% chicory as a source of the prebiotic, inulin. Within a month on the product, the dog started running around "like a puppy" and "is now bounding up the stairs so fast that he trips over his own feet".

"Winalot" is a trade mark belonging to Societé de Produits Nestlé of Switzerland.

Example 4

A pet owner in California, USA reports that, after changing his dog's diet to Alpo Complete dry dog food containing about 1% chicory by weight (ALPO is a trade mark of Societé de Produits Nestlé), its coat became noticeably shinier, its eyes brighter and its overall activity levels increased.

A dog owner in Pennsylvania reported similarly that his dog, after changing to a diet of Alpo Complete soon exhibited remarkably improved changes in looks and in "attitude", while a dog owner in West Virginia observed that his dog no long behaved in accordance with its 13 years, but instead seemed far younger.

Claims

1. A method for improving activity in a pet, the method comprising
administering to the pet a nutritional agent which promotes the growth of
bifido- and lactic-bacteria in the gastro-intestinal tract of the pet.
2. A method according to claim 1 in which the nutritional agent is a
component of a nutritionally complete pet food.
3. A method according to claim 1 in which the nutritional agent is selected
from the group of prebiotics and probiotic micro-organisms.
4. A method according to claim 3 in which the prebiotic is selected from the
group of inulin, fructooligosaccharides and plant materials which contain
inulin and/or fructooligosaccharides.
5. A method according to claim 1 in which the pet food further comprises a
long chain fatty acid.
6. A method according to claim 1 in which the pet food further comprises a
starch source selected from one or more of corn, rice, barley, and wheat.
7. A method for improving activity in an elderly pet, the method comprising
administering to the pet a nutritionally complete pet food which contains a
nutritional agent which promotes the growth of bifido- and lactic-bacteria in
the gastro-intestinal tract of the pet.
8. A method according to claim 7 in which the nutritional agent is selected
from the group of prebiotics and probiotic micro-organisms.
9. A method according to claim 8 in which the prebiotic is selected from the
group of inulin, fructooligosaccharides and plant materials which contain
inulin and/or fructooligosaccharides.
10. A method according to claim 7 in which the pet food contains about 0.1%
to about 5% by weight of a prebiotic as the nutritional agent.

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11. A method according to claim 7 in which the pet food contains about 10^4 to about 10^{10} cells of a probiotic micro-organism per gram of the pet food as the nutritional agent.
12. A method according to claim 7 in which the pet food further comprises a long chain fatty acid.
- 10 13. A method according to claim 1 in which the pet food further comprises a starch source selected from one or more of corn, rice, barley, and wheat.
- 15 14. A method for improving activity in an elderly dog, the method comprising administering to the dog a nutritionally complete pet food which contains a nutritional agent which promotes the growth of bifido- and lactic-bacteria in the gastro-intestinal tract of the dog.
- 20 15. A method for improving activity in an elderly dog, the method comprising administering to the dog a nutritionally complete pet food which contains a nutritional agent which promotes the growth of bifido- and lactic-bacteria in the gastro-intestinal tract of the dog.
- 25 16. A method for ameliorating joint stiffness in a pet, the method comprising administering to the pet a nutritional agent which promotes the growth of bifido- and lactic-bacteria in the gastro-intestinal tract of the pet.
- 30 17. A method according to claim 16 wherein the nutritional agent assists in improving systemic inflammatory status in the pet.
18. A method according to claim 17 wherein the nutritional agent assists in reducing concentrations of pathogenic bacteria known to contribute to an increased inflammatory status.
- 35 19. A method according to any one of claims 16 to 18 in which the pet is an elderly dog.
20. A method according to any one of claims 16 to 18 in which the pet is an elderly cat.

21. A method for improving activity in an elderly dog, the method comprising administering to the dog a nutritionally complete pet food which contains a prebiotic selected from the group of inulin, fructooligosaccharides and plant materials which contain inulin and/or fructooligosaccharides.

[illegible]